CLAIMS

What is claimed is:

1. A fuel supplying apparatus comprising a fuel and a polymer for controlling rate of fuel release.
2. The fuel supplying apparatus of claim 1, wherein the fuel is methanol.
3. The fuel supplying apparatus of claim 1, wherein the polymer is selected from a group consisting of porous polymers, cross-linked polymers, and thermoplastic resin polymers.
4. The fuel supplying apparatus of claim 3, wherein the polymer is selected from a group consisting of polyamide, cross-linked polyvinyl acetate, and their co-polymers.
5. The fuel supplying apparatus of claim 4, wherein the polymer is copolyamide.
6. The fuel supplying apparatus of claim 5, wherein the polymer is mixed with the fuel to form a gel-like structure.
7. The fuel supplying apparatus of claim 1, wherein the polymer is a membrane for isolating the fuel and a fuel solvent, and the membrane is only permeable to the fuel.
8. The fuel supplying apparatus of claim 7, wherein the membrane is a single-layered cross-linked membrane allowing the fuel to permeate in one direction.
9. The fuel supplying apparatus of claim 8, wherein the cross-linked membrane is selected from a group consisting of polyvinyl acetate, oligomers and copolymers of vinyl pyrrolidone, and polytetrafluoroethylene.
10. The fuel supplying apparatus of claim 8, wherein the membrane further comprising a second cross-linked membrane formed on an outer layer of the

single-layered cross-linked membrane to permeate only to the fuel under certain circumstances so as to form a multi-layered complex membrane.

11. The fuel supplying apparatus of claim 10, wherein a porous substrate is provided between the single-layered cross-linked membrane and the second cross-linked membrane.
12. The fuel supplying apparatus of claim 11, wherein the second cross-linked membrane is a cross-linked membrane made of polyvinyl alcohol.
13. The fuel supplying apparatus of claim 12, wherein the second cross-linked membrane is moistened to permeate to the methanol.
14. The fuel supplying apparatus of claim 1 is a Direct Methanol Fuel Cell (DMFC).
15. A methanol fuel cell using the fuel supplying apparatus of claim 1.